

A B S T R A C T

In order to reduce the effects of non-linear phenomena in WDM optical transmission networks, the optical carrier frequencies of the multiplex signals belong to a comb of frequencies that are spectrally spaced apart in irregular manner while nevertheless belonging to a chart of optical frequencies that are spectrally spaced apart in regular manner at a pitch df . These frequencies are selected in such a manner as to enable them to be dropped from the multiplexed signals by N respective periodic optical filtering operations having the same free spectrum interval (Df) equal to $M \cdot df$, where M is an integer greater than or equal to N , the filtering operations enabling N consecutive frequencies to be dropped from the chart. In addition, the spacing between any pair of frequencies of the comb is different from any integer multiple greater than or equal to 1 of the free spectrum interval (Df).